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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,437	10/01/2003	Shigeru Kamio	2018-785	5658

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EXAMINER	
COLON SANTANA, EDUARDO	
ART UNIT	**PAPER NUMBER**
2837	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,437	KAMIO ET AL.	
	Examiner	Art Unit	
	Eduardo Colon-Santana	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-8 and 10-15* is/are rejected.

7)☒ Claim(s) *2-5 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/01/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6-8 and 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kliman et al. U.S. Patent No. 4,896,089.

Referring to claims 8 and 10, Kliman et al. discloses a fault management system for a switched reluctance motor as claimed (see all figures and respective portions of the specification). Kliman discloses a well-known motor control system (figure 1), in which to adapt a fault management system that detects faults through a phase current differential. Kliman et al. further describes the use of an encoder (rotor position 14), producing a pulse signal in synchronism with the rotation of a rotor (12); a control means (22) for performing feedback control to rotate the rotor to a target position and sequentially switching a current supply phase of the motor; and a disconnection (deactivated) detecting means to detect a deactivated or disconnected phase winding, and to continue supplying current to other phases for which no deactivation or disconnection are detected (see Abstract, Col. 1, lines 24-34, lines 49-53, Col. 2, line 40 to Col. 3, line 8 and Col. 8, lines 54-57).

As to claim 1, the method steps are inherent in the product structure described by Kliman above to claim 8. Additionally, Kliman et al. discloses another aspect of the invention in which reversing and holding means are achieve by using one or more intact phases used by control means (22) to generate negative torque, thereby rotating the SRM in the direction opposite to the specified (reverse) for a short period of time until the rotor is outside the region in which positive torque production cannot be generated (see Col. 9, lines 16-32).

Referring to claims 11 and 12, Kliman et al. mentions that unidirectional current pulses synchronized with rotor movement can be generated in a converter using unidirectional current switching elements (i.e. transistors), therefore the control means (22) would produce the necessary switching current to converter (18) to produce torque to aligned the rotor, if a deactivation or disconnection occurs in one phase windings the control means generates negative torque, thereby rotating the SRM in the direction opposite to the specified for a period of time (holding process).

Referring to claim 13, Kliman et al. discloses in figure 2, a system of drive coil in which windings of respective phases (i.e. 16a, 16b) are connected to each other.

As to claims 6 and 14, Kliman et al. discloses that the motor is a switched reluctance motor.

Referring to claims 7 and 15, Kliman et al. mentions various useful applications in which the fault-tolerant drive scheme can be used, and mentions an automobile power steering, as another exemplary application (see Col. 2, lines 18-37). The use of switch reluctance motor to drive a position switching mechanism is well-known and readily available to one skill in the art.

Allowable Subject Matter

5. Claims 2-5 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record in form 892 and not specifically relied upon is considered pertinent to applicant's disclosure to further show the state of the art. See in addition Ferreira et al. U.S. Patent No. 5,737,164, which describes applicant's invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon-Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Martin can be reached on (571) 272-2800 X.37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ECS
March 08, 2005

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
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